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USSR

UDC 51:330.115

TRUKHAYEV, R. I., KHOMENYUK, V. V.

"The Selection of Coefficient α in the α-Criterion of Gurvitz in Multistep Problems of Decision Making Under Conditions of Uncertainty"

Mat. Metody Issled. i Optimiz. Sistem. Vyp. 4 [Mathematical Methods of Investigation and Optimization of Systems, No 4 -- Collection of Works], Kiev, 1970, pp 16-24, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V484).

NO ABSTRACT.

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Acc. Nr: AP0051958 K Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 16-19

LATENT PERIOD OF NICTITATING REFLEX IN MAN IN RESPONSE TO STIMULATION OF THE EYE WITH AN AIR CURRENT

T. L. Khomeriki

N. N. Burdenko Research Institute of Neurosurgery of the AMS of the USSR, Moscow

Nictating reflex in response to stimulation of the eye was registered electromyographically. The length of its latent period (LP) is independent from the position of leads (upper lid, lower lid, exterior angle of the eye). In tests conducted on 18 healthy subjects evidence was obtained that with simultaneous stimulation of both eyes the LP on the left and right was practically the same. When stimulation comes from one side only the LP is always shorter on the side of stimulation. With simultaneous stimulation of both closed eyes the LP is of shorter duration than in stimulating both open eyes.

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USSR K UDC: 612.833.847

KHOMERIKI, T.L., Scientific Research Institute of Neurosurgery imeni Akademician N.N. Burdenko, Academy of Medical Sciences USSR

"The Latent Period of the Blinking Reflex in Man Following Stimulation of the Eye With a Jet of Air"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 2, 1970, pp 16-19

Abstract: Electromyographic recording of the blinking of human subjects in response to stimulation of the eyes with a jet of air showed that the length of the latent period was independent of the position of the leads (upper lid, lower lid, exterior angle of the air). When both eyes were stimulated simultaneously, the latent period of the reflex was the same on either side. When only one eye was stimulated, the latent period was invariably shorter on the side stimulated. The latent period following stimulation of the two eyes simultaneously was shorter when both eyes were closed than when they were open.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR K UDC 621.394.147:534.782

[redacted], I. P. and OKUN', V. A.

"Efficiency of Correcting Codes Used in Discrete Form Speech Transmission"

Moscow, Elektrosvyaz', No. 9, 1970, pp 19-23

Abstract: A discussion of the use of parametric methods of compressing the speech spectrum to convert it into a sequence of binary pulses is given. The compression unavoidably entails a reduction of the noise immunity of the signal. However, there are two ways of improving the noise immunity: one is to raise the speech transmission speed to the level of the transmission speed of the binary pulses if the latter exceeds the former; the other is to use correcting codes for correcting errors by employing the excess of binary pulse transmission speeds over speech transmission speeds to transmit correction symbols. Although there is insufficient data at present to decide which of these two methods is better, the efficiency of using correcting codes can be estimated for the particular case of binary pulse transmission speeds of 2000 bits per second by comparing the noise immunity of low speech compression vocoders with speech transmission speeds of 2000 bits per second with high compression vocoders with speeds of 1000 bits per second using noise-immune coding. This method is demonstrated.

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXTENT OF POLARIZATION ACCORDING TO THE FLUORESCENCE AND ABSORPTION SPECTRA OF ANTHRACENE DERIVATIVES -U-

AUTHOR-(03)-KIVACH, L.N., SARZHEVSKIY, A.M., KHOMICH, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 608-10

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORESCENCE SPECTRUM, ANTHRACENE, GLYCEROL, BUTANOL, ETHANOL, LOW TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2021 STEP NO--UR/0048/70/034/003/0608/0610

CIRC ACCESSION NO--AP0125609

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA OF 2,ACETYL, ANTHRACENE (I), 9,10,DIPROPENYLANTHRACENE, AND SEVERAL OTHER ANTHRACENE DERIVS. IN GLYCEROL, ISO BUOH, AND ETOH IN A WIDE TEMP. RANGE WERE MEASURED, AND THE POLARIZATION P WAS ESTD. AS A FUNCTION OF FREQUENCY. THUS, IN COOLING A SOLN. OF I, THE EXTENT OF POLARIZATION AT THE SHORT WAVE SIDE OF THE FLUORESCENCE SPECTRUM INCREASED FASTER COMPARED WITH THE LONG WAVE FLUORESCENCE COMPONENT. THE MAX. POLARIZATION OF I WAS REACHED AT MINUS 30DEGREES IN GLYCEROL BUT ONLY AT SMALLER THAN MINUS 90DEGREES IN BUOH. THE INTERACTION OF THE FLUORESCING MOL. WITH THE MEDIUM AT DIFFERENT TEMPS. IS DISCUSSED. THE EFFECT OF INTRAMOL. VIBRATIONS ON P IN THE ANTHRACENE DERIVS. COULD BE VERIFIED FROM POLARIZATION STUDIES IN THE LONG WAVE ABSORPTION BAND OF I IN GLYCEROL.

FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DICHROISM AND OSCILLATOR ORIENTATION IN MOLECULES OF ANTHRACENE DERIVATIVES -U-

AUTHOR-(02)-SARZHEVSKIY, A.M., KHOMICH, M.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1969, 13(12), 1070-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, ANTHRACENE, ABSORPTION BAND SPECTRUM, UV SPECTRUM, POLYTETRAFLUOROETHYLENE, VINYLIDENE RESIN, ELECTRON OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1137 STEP NO--UR/0250/69/013/012/1070/1072

CIRC ACCESSION NO--AT0119991

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0119991
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DICHROISM AND POLARIZATION SPECTRA WERE STUDIED OF THIN LAYERS OF POLY (TETRAFLUOROETHYLENE),POLY(VINYLIDENE CHLORIDE) COPOLYMER ACTIVATED BY 1 AND 2,ACETYLANTHRACENES (I AND II, RESP.),1,4,DIMETHYL,ANTHRACENE (III), 9,10,DIALLYLANTHRACENE (IV), AND 2,(ALPHA,HYDROXY,ETHYL)ANTHRACENE (V). THE ABSORPTION BANDS WERE COMPARED IN THE NEAR UV REGION, WHICH HAVE THE LONGEST AND SHORTEST WAVE LENGTHS. FOR III AND IV, THE DICHROISM IS NEG. AND POS., RESP., IN THE EXCITATION OF THESE BANDS AND THE FLUORESCENCE POLARIZATION IS POS. AND NEG., RESP. THE DICHROISM HAS LOW POS. VALUES IN THE LONG WAVE BANDS OF I AND V. THE SHORT WAVE OSCILLATOR IS ORIENTED ALONG THE LONGITUDINAL AXIS OF THE MOL. AND THE LONGWAVE ONE, AS WELL AS THE OSCILLATOR OF THE EMISSION, IN A DIRECTION PERPENDICULAR TO IT. THE ORIENTATION OF THE MOLS. OF THE ANTHRACENE DERIVS. IN THE POLYMER LAYERS IS SUPPOSED TO BE PARALLEL WITH THE AXIS OF THE LAYER EXTENSION. A STRONG INTERACTION BETWEEN THE PI ELECTRONS OF THE RING SYSTEM AND THOSE OF THE SUBSTITUENT OCCURS IN THE MOL. OF II. THE DICHROISM HAS A MAX. VALUE AT 350 NM, WHERE THE POLARIZATION SPECTRUM HAS A MIN. THE OSCILLATORS OF BOTH SHORT WAVE AND LONG WAVE BANDS ARE ORIENTED ALONG THE TRANSVERSE AXIS OF THE II MOL.
FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR UDC 621.385.633.032.266

GOLENITSKIY, I.I., ZAKHAROVA, A.N., KHOMICH, V.B.

"Effect Of Conditions For Shaping A Beam On The Output Parameters Of A BWT With Electrostatic Focusing"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 3-11 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A188)

Translation: The results of a computation of a backward-wave tube with periodic electrostatic focusing are presented from the position of nonlinear two-dimensional theory for an O-type device. It is shown that the conditions for shaping a beam have a significant effect on the output parameters of the device (output power, efficiency, range of electrical retuning of the frequency, and so forth). 10 ref. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 621.385.623.4

SAZONOV, B.V., KHOMICH, V.B.

"Some Features Of Calculations For Klystrons With Periodic Electrostatic Focusing"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 2, pp 3-10 (from RZh--Elektronika i yeye primeneniya, No 8, August 1970, Abstract No 8A127)

Translation: The dependences are determined by the modeling method of the parameters of a focusing field, on the basic dimensions of a single-potential electrostatic lens. The data obtained are used to determine the flight time of electrons in the space drift and the optimum length of the bunching area. An approximate method of calculating the field in the lenses is presented. Summary.

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UDC 621.385.633

GOLENITSKIY, I.I., ZAKHAROVA, A.N., KHOMICH, V.B.

"Forming Of Ribbon Electron Stream In A Dynamic Regime Of A BWT With Periodic Electrostatic Focusing"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 3-17 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A159)

Translation: A system of equations is formulated for describing the process of forming beams by a periodic electrostatic field in a dynamic regime of a BWT. The special features are discussed of a solution on a Type M-20 digital computer of problems of dynamic electron optics, and a solution is presented of concrete problems. Author's Summary.

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USSR UDC 537.224:621.9.416

IL'IN, Yu. A., KHOMICHEV, V. D.

"A Method of Making Capacitor Film"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290332, division H, filed 6 Jun 69, published 22 Dec 70, p 134

Translation: This Author's Certificate introduces a method of making capacitor film which consists of a layer of metal and a polymer film applied by lacquering or some other method on a base with subsequent separation of the film from the base. As a distinguishing feature of the patent, the exposure of the metal through porous defects in the film is prevented in the process of metal deposition by vaporization in vacuum by depositing the layer of metal on a sublayer which has been preapplied to the base and has lower adhesion to the deposited metal than does the polymer layer. The polymer film is applied after depositing the metal on this sublayer.

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Acc. Nr: AP0036812

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 31-35

DYNAMICS OF DISCHARGE OF TYPHOID BACILLI IN CHRONIC CARRIERS IN DIFFERENT SEASONS OF THE YEAR AND ITS SIGNIFICANCE IN THE EPIDEMIOLOGY OF THE DISEASE

S. R. Khomik, Ya. M. Ferdinand, G. I. Skirda, N. S. Kovaleva, N. S. Solovey, K. I. Popova, I. P. Timoshkina, M. M. Shelkovich, B. A. Plyuro, Apeykina, M. D.

The feces of forty five carriers of typhoid bacillus were examined in different seasons of the year. The greatest number of bacilli was discharged from January to May (0.1 to 960 million per gm of feces were the number of bacilli found throughout the year). Therefore, the authors recommend examination of carriers to be carried out mainly during the first half of the year.

There was established no association between the seasonal distribution of the incidence of the disease and the intenisity of bacterial discharge.

D.M.

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USSR

UDC 669.71.042.6

SMIRNOV, A. I., KHOMITSKIY, A. A., IVLEV, V. A.

"Effect of Crystallization Conditions on the Tightness of Aluminum Alloys"

Usadochn. protessy v splavakh i otlivkakh -- V sb. (Shrinkage Processes in Alloys and Castings -- collection of works), Kiev, Naukova Dumka Press, 1970, pp 278-285 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G185)

Translation: A brief analysis of the tightness coefficient of castings made of alloys based on Al as a function of the ratio of the metal densities in the liquid and solid states, the thermophysical characteristics of the metal, the form and viscosity of the melt, is presented. There are 2 illustrations and 1 table.

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UDC 681.142.62

YEVSEYEV, G. T., MARCHUK, A. A., KHOMOVENKO, N. G., CHIRKOV, M. K., Candidate of Physical and Mathematical Sciences, SHAUMAN, A. M., Candidate of Physical and Mathematical Sciences

"Keyboard Data Input Device for Computers"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 6, November-December, 1970, pp 57-59

Abstract: This article contains a description of a keyboard electronic digital data input device built from two ferrite cores with external magnetization. The device is designed for generating a single pulse which proceeds synchronously with the basic cycle frequency to the computer after each complete movement of one of the keys. The device was designed to satisfy requirements of high reliability and high speed. By using two different outputs from one key for entering the code and blocking, the effect of vibration and other mechanical effects are excluded, and all remaining keys are blocked effectively on pressing one of them. The input device is constructed as a closed automatic control system insuring uniqueness of the input data.

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USSR UDC: 621.314.26

BABAK, O. V., BIGUN, Ya. F., BOLOTOV, B. V., SITNIKOV, L. S., UTYAKOV, L. L., KHOMOVNENKO, M. G., Institute of Electrodynamics, Academy of Sciences of the UkrSSR

"A Pulse Frequency Divider"

USSR Author's Certificate No 251000, filed 20 May 68, published 30 Jan 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A183 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a storage core made of a ferromagnetic material with rectangular hysteresis loop. To insure the possibility of regulating the division coefficient, the storage core with its windings is placed between the poles of a core of magnetically hard material. The control winding of this second core is connected to a key coincidence gate through a pulse shaper circuit. A pulse with fixed amplitude and duration is fed to the input of the magnetic divider. Before arrival of the first pulse, the core of the divider is in a state of negative magnetization and the shaper transistor is in the cutoff state. The first and each subsequent pulse increase the level of magnetization of the core up to the saturation point. When this happens, the tran-

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sistor is switched to the active state and it shapes an output pulse. The circuit then returns to the initial state. The division coefficient of the frequency divider can be varied by changing the magnetization of the magnetically hard core, thus changing the hysteresis loop of the core with rectangular characteristics. One illustration. N. S.

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USSR

KHOMSKAYA, Ye. D.

Mozg i Aktivatsiya (Brain and Activation), Moscow, 1972, 382 pp

Translation: Foreword

Ye. D. Khomskaya's monograph fills a large gap in human neuropsychology and neurophysiology. In recent years, study of the processes of activation and mechanisms of their regulation achieved considerable progress. Whereas 20 years ago we knew very little about the psysiological processes underlying changes in activity, now that the ascending and descending branches of the activating reticular formation have been discovered and the role of the brain-stem, thalamus, and limbic system in this function has been elucidated, the mechanisms of change in wakefulness and the control of these mechanisms are much clearer and the underlying processes are more accessible to objective investigation. However, one aspect of these very important processes has received comparatively little attention. Not enough is known about the ways in which the most complex forms of regulation of human activity take place, about the role that external and internal speech plays in them, and about the particular brain systems, especially the cortical, that take part in these processes.

Ye. D. Khomskaya's work, the fruit of 10 years' intensive study, is an attempt to answer these questions which are important to psychology and

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KHOMSKAYA, Ye. D., Mozg i Aktivatsiya, 1972, 382 pp

neurophysiology alike. The author shows that the frontal lobes of the brain, which have developed farthest in man, are the apparatus most closely associated with the regulation of activity and responsible for maintaining the conditions needed to carry out the complex programmed activity aimed at reaching the desired goals. The initial results of the research which this book summarizes were published in a collection of articles that I wrote with Ye. D. Khomskaya: Lobnyye doli i regulyatsiya psikhicheskikh protsessov (The Frontal Lobes and Regulation of Mental Processes). These studies have now been broadened and supplemented with new and important facts.

Ye. D. Khomskaya has made a significant contribution to our knowledge about the functions of the frontal lobes and to the analysis of the objective neuropsychological methods that help to make more accurate the topical diagnosis of local lesions of the human brain. There is no doubt this book will be of interest to its readers.

Professor A. R. Luriya

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KHOMSKAYA, Ye. D., Mozg i Aktivatsiya, 1972, 382 pp

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

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KHOMSKAYA, Ye. D., Mozg i Aktivatsiya, 1972, 382 pp

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC: 681.3

ABRAYTIS, L. B., MATITSKAS, I.-K. L., KHOMSKIS, R. R.

"On the Problem of Arranging Elements of Different Overall Dimensions"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 211-218 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V886)

Translation: Mathematical formulation of the problem of arranging elements of different overall dimensions with the aid of R-functions is considered. An algorithm is proposed for digital computer solution of this problem. The possibilities of solving this problem by sequences of heuristic methods are discussed. Authors' abstract.

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UDC: 681.3.06:51

ABRAZAS, R. Yu., ZHINTELIS, G. B., KHOMSKIS, R. R.

"Minimizing the Mean Time of Access to Magnetic Discs" -

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 155-164 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V957)

Translation: Optimum placement is considered for the data blocks in an external magnetic-disc memory, which makes it possible to minimize the mean access time. Solution of this problem involves the following stages: 1) arranging the data blocks on similar tracks on the magnetic disc; 2) putting the similar tracks of the magnetic discs in order. The methods developed are easily realized by means of a digital computer, and in most practical instances can be realized manually. Authors' abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 681.142.001.51

ATSTOPAS, F. F., ZHINTELIS, G. B., KHOMSKIS, R. R.

"Optimizing Program Distribution in a Digital Computer Memory"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 95-98

Abstract: A formal method is proposed for initial distribution of a program in a digital computer memory. The method does not require complex computations. The procedure is as follows: 1) program blocks of a given length are formulated; 2) initial distribution of the program is implemented between the immediate-access and auxiliary memories; 3) the program blocks are arranged in the auxiliary memory in the most likely order of input into the immediate-access memory. The proposed method is realized in the form of a program. Two illustrations, bibliography of one title.

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KHOMSKIY, D.I.

SUPERCONDUCTIVITY.

JPRS 54922

12 January 1972

DESCRIPTION OF SUPERCONDUCTIVITY IN TERMS OF THE DIELECTRIC RESPONSE FUNCTION

[Article by D. A. Kirzhnits, Ye. G. Maksimov, and D. I. Khomskiy (Moscow Physical Institute), Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 60, No. 7, 1971, pp 1-51]

Abstract

The authors consider the critical temperature T_c for a superconductive transition under sufficiently general assumptions regarding interelectronic action. It is shown that even with the spin and time dispersion of the interaction taken into account, the equation for determining T_c coincides formally with the corresponding equation in the BCS theory. The principal difference is that it is not the true interelectronic action $V(\vec{q},\omega)$ that enters into the kernel of the obtained equation but some other quantity $V_{eff}(\vec{q},\omega)$ connected directly with $V(\vec{q},\omega)$ but differing substantially from it. In particular, as opposed to $V(\vec{q},\omega)$, which has sharp resonances and whose imaginary part differs from zero, $V_{eff}(\vec{q},\omega)$ is a continuous, real function of its arguments, thus permitting it to be replaced by a step function and justifying the use of the BCS model. The Coulomb interaction is correctly calculated, and it is shown that with the space and time dispersion taken into account, the contribution made by this interaction to the critical temperature is entirely reduced because of the known logarithmic factor. The magnitude of V_{eff} is determined in the weak coupling approximation. This same approximation yields an expression for T_c, written in terms of the spectral density of the initial interaction. Two of the simplest models are considered by way of examples illustrating the obtained formulas.

Introduction

Since 1957, the theory of superconductivity has achieved remarkable success in its explanation of this phenomenon. Even the simplest approach,

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TITLE--ELECTRON CORRELATIONS IN NARROW BANDS -U-

AUTHOR--KHOMSKIY, D.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 31-57

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC PROPERTY, ELECTRON, MAGNETIC MOMENT, MOLECULAR KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0193 STEP NO--UR/0126/70/029/001/0031/0057

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2/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054989

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORRELATION FORCES RESULTING IN LOCALIZATION OF ELECTRONS, SO THAT 2 ELECTRONS CANNOT SIMULTANEOUSLY OCCUPY THE SAME CENTER, CORRESPOND IN FACT TO FORMATION OF LOCAL MAGNETIC MOMENTS IN THE SYSTEM, AND UNDER THESE CONDITIONS VARIOUS INTERESTING PROPERTIES CAN EMERGE, SUCH AS METAL DIELEC. TRANSITION, MAGNETIC ORDERING, AND ELECTRON ORDERING. WHEN THE RADIUS OF THE INCOMPLETELY FILLED SHELL IS LESS THAN THE SEPN. BETWEEN CENTERS, AND THE INTERELECTRON CORRELATION IS LARGE, THE KINETIC PROPERTIES CAN VARY. THE HUBBARD MODEL IS PROPOSED AS THE SIMPLEST FOR STUDYING THESE FEATURES.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC: 519.2

ROZIN, S. G., ROZINA, K. A., KHOMSKIY, L. Kh.

"On a Method of Modeling an Exponential Distribution Law"

Zh. vychisl. mat. i mat. fiz., 1973, 13, No 2, pp 505-505 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V157 by the authors)

Translation: The paper investigates a demonstration of modeling of an exponential law of distribution proposed by Butler (RZhMat, 1958, 8273). It is noted that an error occurs in Butler's work. This is taken as a refutation of the recommendation for using this method in modeling an exponential distribution law.

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USSR UDC 612.397.2+612.461.269.018:612.453/-06:612.592.1

KHOMULO, P. S., POPOV, A. A., and DMITRIYEVA, N. A., Chair of Pathological Physiology and Central Scientific Research Laboratory, Leningrad, Sanitary - Hygiene Medical Institute and Leningrad Pediatric Medical Institute

"Changes in Lipid Metabolism and Excretion of 17-Hydroxycorticosteroids With Urine in Polar Explorers During Adaptation to Life in the Antarctic"

Moscow, Kardiologiya, No 9, 1972, pp 48-52

Abstract: Blood cholesterol and phospholipid levels and excretion of 17-hydroxycorticosteroids with urine were studied in 98 members of the 1968-1970 Soviet Antarctic Expedition age 24 to 50. During the first month in the Antarctic the total blood cholesterol and phospholipid content increased proportionately but 6 months later the phospholipid concentration decreased while the cholesterol level remained high. These changes were directly related to the length of time spent in the Antarctic and independent of the food eaten. The cholesterol level was highest in those in the 41- to 50-year group and lowest in those under 30. The disturbance of lipid metabolism in the 6th month is similar to that observed in persons with active atherosclerosis. At this time there was also increased excretion of 17-hydroxycorticosteroids with urine, suggesting that the cause of the elevated blood

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USSR
KHOMULO, P. S., et al., Kardiologiya, No 9, 1972, pp 48-52

cholesterol level was intensified activity of the adrenal cortex. After 11 months the cholesterol level dropped but it was still higher than in the control group (persons of the same age in Leningrad).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 612.821.7

KHOMUTETSKAYA, O. Ye., Team on Comparative Physiology of Sleep and Wakefulness, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Leningrad

"The Role of the Accessory Optic System in the Control of Natural Sleep and Wakefulness"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 696-703

Abstract: The topography and function of the accessory optic system's ectomamillary nuclei and of the anterior hypothalamus were investigated in chronic hens. Both structures display similar biocurrents, especially in natural and photogenic catalepsy when high-amplitude spindle-shaped potentials alternate with low-amplitude high-frequency potentials in an identical fashion. Bilateral destruction of ectomamillary nuclei, like destruction of the preoptic area in the hypothalamus, abolishes natural and photogenic catalepsy. Unilateral destruction of either structure considerably shortens the duration of wakefulness and prolongs the slow-wave and paradox stages of sleep. In addition, it also changes the tonus of neck muscles. It is obvious that a close functional correlation exists between the preoptic hypothalamic area and the ectomamillary 1/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

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KHOMUTETSKAYA, O. Ye., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 696-703

nuclei. In all probability, the accessory optic system plays an adaptive trophic role similar to that of the anterior hypothalamus.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 537.533.2+537.534

SHUL'MAN, A. R., KORABLEV, V. V., MOROZOV, YU. A., KHOMUTINNIKOVA, V. A.

"Investigation of the Variation, with Temperature of the Coefficients of Secondary Electron Emission and Inelastic Reflection of Electrons of Germanium Oxide Single Crystals"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute), 1970, No 311, pp 17-19 (from RZh-Fizika, No 12 (I), Dec 70, Abstract No 12Zh660)

Translation: The coefficient of secondary electron emission σ was investigated in the primary electron energy range U_p 50-2000 ev for SiO_2 single crystals. Samples with the faces (110) or (001) on the surface were investigated. Both samples showed a variation with temperature σ close to that described by Dekker theory. The coefficient of inelastic reflection is independent of temperature in the range of temperatures studied (from room to 350° C). Authors abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR UDC 547.859:577.150.13:577.164.12

SHAPIRO, T. A., KHOMUTOVA, YE. D., BEREZOVSKIY, V. M., All-Union Scientific Research Institute of Vitamins

"Nucleotides, Coenzymes, Phosphate Esters. XXVI. Synthesis of P^1-(Riboflavin-5')-P^2-[adenosine-2'(3')phospho-5']diphosphate and P^1-(Riboflavin-5')-P^1-(adenosine-5') Monophosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1634-1638

Abstract: The paper describes synthesis of the monophosphate structural analog of flavin adenine dinucleotide -- p^1-(riboflavin-5')-P^1-(adenosine-5') monophosphate (RAdP) -- and a flavin adenine dinucleotide phosphate (FADP) analogous to natural nicotine amide adenine nucleotide phosphate in which the third phosphate group occupies the 2'(3') position of the ribose part of the adenosine -- p^1-(riboflavin-5')-P^2-[adenosine-2'(3')-phospho-5']diphosphate. Phosphate FADP was synthesized from tri-n.-octyl ammonium salt of riboflavin-5'-phosphate and 4-morpholino-N,N'-dicyclohexylcarboxamidinium salt of adenosine-2'(3')-phospho-5'-phosphomorpholide. The reaction was done in a mixture of anhydrous pyridine and dimethylformamide at 50°C for 20 hours. Compound RAdP was synthesized from 2', 3', 4'-triacetyl riboflavin and $N,O^2,O^{3'}$-triacetyl

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SHAPIRO, T. A., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul72, pp 1634-1638

adenosine-5' - phosphate. The reaction was carried out in anhydrous pyridine at 20°C for five days in the presence of a ten-fold excess of N,N'-dicyclohexylcarbodiimide. It was found that reducing the number of phosphate groups in the flavin adenine dinucleotide molecule (from two to one) leads to a sharp reduction in the activity of RAdP as a cofactor of D-amino acid oxidase. It was found that FADP has 18% of the coenzymatic activity of flavin adenine dinucleotide.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NUCLEOTIDES, COENZYMES, PHOSPHATES. XXII. SYNTHESIS OF P PRIME1,RIBOFLAVIN,5,YL, P PRIME3,ADENOSIN,5,YL, TRIPHOSPHATE AND P

AUTHOR-(03)-KHOMUTOVA, YE.D., SHAPIRO, T.A., BEREZOVSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 470-4

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOTIDE, COENZYME, PHOSPHATE, BIOSYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0596 STEP NO--UR/0079/70/040/002/0470/0474

CIRC ACCESSION NO--AP0117824

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117824

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADENOSINE 5,PYROPHOSPHATE AND MORPHOLINE GAVE 70PERCENT ADENOSINE 5 PRIME,PYROPHOSPHATE MORPHOLIDE ISOLATED AS THE BIS(4,MORPHOLINE,N,N PRIME,DICYCLOHEXYLCARBOXAMIDINIUM) SALT (I). OCTYLAMINE AND RIBOFLAVINE 5 PRIME,PYROPHOSPHATE IN 24 HR IN AQ. SOLN. GAVE 64.5PERCENT ORANGE RED RIBOFLAVINE 5 PRIME,PYROPHOSPHATE BIS(TRIOCTYLAMMONIUM) SALT (II) AFTER DRYING OVER P SUB2 O SUB5. I AND TRIOCTYLAMMONIUM RIBOFLAVINE 5 PRIME, PHOSPHATE DRIED IN PYRIDINE BY DISTN. OF THE SOLVENT, THEN TREATED WITH PYRIDINE,ME SUB2 NCHO 20 HR AT 50DEGREES AFTER FINAL TREATMENT WITH NACLO SUB3 IN MEOH GAVE, P PRIME1,5 PRIME,RIBOFLAVINE,P PRIME3,5 PRIME,(ADENOSINE TRIPHOSPHATE), PURIFIED BY SEPHADEX G-25 IN 27.5PERCENT YIELD; THIS HAD 18-20PERCENT ACTIVITY RELATIVE TO NATURAL FAD AS THE COENZYME FOR D,AMINO ACID OXIDASE ACTIVITY. RESULTS ON HYDROLYSIS IN ACID AND ALK. SOLNS. WERE REPORTED. SIMILARLY II WAS USED AS ABOVE IN THE SYNTHESIS OF P PRIME1, 5 PRIME, RIBOFLAVINE,P PRIME4,5 PRIME,(ADENOSINE TETRAPHOSPHATE). THE RESULT OF HYDROLYSIS WERE REPORTED. LENGTHENING THE PHOSPHATE CHAIN IN SUCH SUBSTANCES LOWERE THEIR ACTIVITY AS COENZYMES. FACILITY: VSES. NAUCH.-ISSLED. VITAM. INST., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC: 547.859 : 577.150.13 : 577.164.12

KHOMUTOVA, YE. D., SHAPIRO, T. A., and BEREZOVSKIY, V. M., All-Union Scientific Research Vitamin Institute, Moscow, Ministry of Health USSR

"Nucleotides, Coenzymes, Phosphoric Esters. XXII. Synthesis of P^1-(Riboflavin-5')-P^3-(adenosine-5')triphosphate and P^1-(Riboflavin-5')-P^4-(adenosine-5')tetraphosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 470-474

Abstract: The authors undertook to synthesize unsymmetrical dinucleoside polyphosphates in the flavin dinucleotide series for purposes of ascertaining the effect of the length of the phosphoanhydride chain connecting the flavin and adenylic parts of the molecule on its ability to recombine with the specific apoenzyme into the corresponding enzyme. P^1-(Riboflavin-5')-P^3-(adenosine-5')triphosphate and P^1-(riboflavin-5')-P^4-(adenosine-5')tetraphosphate were synthesized from bis-4-morpholine-N,N'-dicyclohexylcarboxamidinium salt of adenosine-5'-diphosphate morpholide and tri-n.-octylammonium salts of riboflavin-

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KHOMUTOVA, YE. D., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 470-474

5'-mono- and riboflavin-5'-diphosphates respectively. It is shown that an increase in the length of the phosphoanhydride chain in the flavin adenine dinucleotide molecule brings about a decrease in the activity of these compounds as cofactors of D-amino acid oxidase as compared with flavin adenine dinucleotide.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR UDC:536.468

KHOMYAK, Ye., YAROSINSKIY, Yu., Warsaw

"Use of Measurements of Ionization Current for Determination of Turbulent Flame Structure"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 390-400

Abstract: A transducer is suggested for local measurement of the ionization current in a turbulent flame. The signal of the transducer depends linearly on the concentration of ions at the boundary layer of the measuring element of the transducer. The magnitude of the signal depends on the velocity of movement of the gas and the temperature of the measuring element. Analysis of the nature of the signal produced in a homogeneous laminar flame, a turbulent flame and the deep zone of a turbulent flame indicates that where the flame is actually turbulent, the method is qualitative in nature. The method is suitable for study of the flame front in a stable flow when the measuring element of the transducer is not heated, and pressure pulsations are slight.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 621.371.1

ZUBRITSKIY, E. V., KHOMYAK, Ye. M.

"Oscillations of the Mean Level of a Microwave Signal on Closed Mountain Routes"

Tr. Buryatsk. in-ta estestv. nauk. Buryatsk. fil. Sib. otd. AN SSSR (Works of Buryatsk Institute of Natural Sciences. Buryatsk Branch of the Siberian Division of the USSR Academy of Sciences), 1970, vyp. 6, pp 73-83 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A272)

Translation: This article contains the results of an experimental study of the mean signal level on frequencies of 49, 75, 77, 25, 100 and 209 megahertz and its oscillations on mountain routes extending from 60 to 160 km which differ with respect to profile. The routes were classified as a function of the microwave propagation mechanism: diffraction, intermediate and tropospheric. On the diffraction routes the mean signal level compares well with that calculated by the diffraction formulas, and it greatly exceeds (by more than 10 decibels) the calculated field as a result of tropospheric propagation. On the transitional routes, the diffraction and tropospheric fields are of the same order, and on the tropospheric routes, the tropospheric field, prevails over the diffraction field. The depth of the oscillations of the mean signal level

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ZUBRITSKIY, E. V., KHOMYAK, Ye, M., Tr. Buryatsk. in-ta estestv. nauk. Buryatsk. fil. Sib. otd. AN SSSR (Works of Buryatsk Institute of Natural Sciences. Buryatsk Branch of the Siberian Division of the USSR Academy of Sciences), 1970, vyp. 6, pp 73-83 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A272)

depends on the type of route. The oscillations of the mean level on the routes of the first group are the least: with respect to a difference in levels of 1 and 99%, the observation times do not exceed 5 decibels; the second group (maximum) reaches 33 decibels on a frequency of 209 megahertz. The experimental curves are approximated well by a normal law. There are three illustrations, one table and a nine-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 621.371.1

KHOMYAK, Ye. M., ABARYKOV, V. N.

"Calculating the Diffraction Attenuation of Microwaves from Natural Obstacles"

Tr. Buryatsk. in-ta estestv. nauk. Buryatsk. fil. Sib. otd. AN SSSR (Works of Buryatsk Institute of Natural Sciences. Buryatsk Branch of the Siberian Division of the USSR Academy of Sciences), 1970, vyp. 6, pp 15-29 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A274)

Translation: This article contains an investigation of an approximate solution of the problem of radiowave diffraction on obstacles of the absorbing type. The function of the effect of the side slopes of the obstacle is defined. On the basis of numerical analysis performed as applied to a convex obstacle of the absorbing type, the diffraction attenuation curves are constructed as a function of the side slopes. There are six illustrations and a ten-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--NATURAL NIDALITY OF ERYSIPELOID AT THE SOUTH EAST OF THE RYAZAN DISTRICT -U-

AUTHOR-(04)-KHOMYAKOV, A.I., SADOVNIKOVA, R.N., FETISOVA, N.A., FETISOV, O.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMILOGII I IMMUNOBIOLOGII, 1970, NR 3, PP 131-133

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RODENT, TICK, ERYSIPELAX, GEOGRAPHIC LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1478 STEP NO--UR/0016/70/000/003/0131/0133

CIRC ACCESSION NO--AP0109538

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109538

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SASOV AND SHATSK REGION LOCALIZED AT THE SOUTH EASTERN PART OF RYAZAN DISTRICT (TSNA RIVER BASIN) THERE WAS ESTABLISHED A NATURAL NIDALITY OF ERYSIPELOID. A TOTAL OF 2,354 OF VARIOUS SPECIES OF RODENTS AND INSECTIVOROUS ANIMALS, 9,405 TICKS (DERMACENTOR PICTUS 4,375, IXODES RICINUS 5,030), AND 93 SAMPLES OBTAINED FROM THE OBJECTS OF THE EXTERNAL ENVIRONMENT WERE EXAMINED IN 1962 -1968. EIGHT CULTURES OF ERYSIPELOTHRIX RHUSIOPATHIAE. VARIANT MURISEPTICUM WERE ISOLATED (IN 1963-4, AND IN 1968-4) FROM THE ORGANS OF 4 ARVICOLA TERRESTRIS L., 13 MICROTUS OECONOMUS, 16 MICROTUS ARVALIS PALL., ONE MYCROMYS MINUTUS, AND ONE RATTUS NORVEGICUS BERKEN.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 019 UNCLASSIFIED

TITLE--RARE EARTH MINERALS AS POSSIBLE GEOTHERMOMETERS -U-

PROCESSING DATE--23OCT70

AUTHOR--KHOMYAKOV, A.P.

K

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD NAUK SSSR 1970, 191(2), 440-2

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RARE EARTH METAL, GEOCHEMISTRY, THERMAL EFFECT, THERMOMETER, THERMOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1052

STEP NO--UR/0020/70/191/002/0440/0442

CIRC ACCESSION NO--AT0119919

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0119919
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF RELATIVE LANTHANOPHILISM OF MINERALS WAS ESTABLISHED DURING SYSTEMATIC STUDY OF DISTRIBUTION OF INDIVIDUAL RARE EARTH ELEMENTS BETWEEN COEXISTING MINERALS FROM VARIOUS GEOL. FORMATIONS. THE SERIES IS A BASIS FOR DEVELOPMENT OF RARE EARTH GEOTHERMOMETERS BECAUSE POSITION OF A MINERAL IN IT CONTROLS THE SIGN AND RELATIVE VALUE OF HEAT EFFECT OF EXCHANGE REACTION OF INDIVIDUAL LANTHANIDES AMONG THE MINERALS. THE BASICITY OF RARE EARTH COMPN. OF EACH SUBSEQUENT MINERAL IN THE SERIES INCREASES AT EXPENSE OF THE PRECEDING MINERAL IN THE CLOSED SYSTEM WITH INCREASE IN TEMP. THE BASICITY OF RARE EARTH COMPN. IN EACH SUBSEQUENT MINERAL OF THE SERIES INCREASES MORE STRONGLY (OR DECREASES LESS NOTICEABLY) THAN IN ANY OF THE PRECEDING MINERALS IN THE OPEN SYSTEM WITH INCREASE IN TEMP. FACILITY: INST. MINERAL., GEOKHIM. KRISTALLOKHIM. REDK. ELEM., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC 621.398.93

SHCHERBAN', A. N., FURMAN, N. I., PRIMAK, A. V., KOPEYKIN, V. I., POKARZHEVSKIY, A. S., MARUSOV, A. G., DASHEVSKIY, L. N., and KHOMYAKOV, A. T., Institute of Technical Heat Physics, Acad. Sc. Ukr SSR, Gas Institute, Acad. Sc. UkrSSR

"Telemetric System for Sanitation-Chemical Control of Air Pollution"

Kiev, Khimicheskaya Tekhnologiya, No 3, (63), May-Jun 72, pp 49-52

Abstract: A complex system is discussed designed to fulfill the following functions: organization of the input operations of the informations from control-determination points (CDP) into the computer memory with wide range of possible changes in the frequency and order of query to CDP; determination of the measurement points with higher pollution and increased frequency of queering the respective recorder; statistical treatment of the information, tabulation or graphing of the results; and analysis of the effectiveness of the utilization of purifying equipment by the change in air pollution in a controlled region.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

Graphite

USSR UDC: 620.171.32

URSIN, V. A., ANUFRIYEV, Yu. P., KHOMYAKOV, E. P., Moscow

"Study of the Influence of Stress Concentration on Variation of Strength Characteristics of Graphites"

Kiev, Problemy Prochnosti, No 7, Jul 73, pp 106-107.

Abstract: A method and results are described from an experimental investigation of the influence of stress concentrators on the strength of graphite materials during heating. The variation factors of strength are calculated. These factors are included in the formula for reliability of the structures. The influence of stress concentrators on reliability of structural elements of heterogeneous graphite materials subjected to forces and heat is studied. VPP and ARV graphites were used in the study.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

KHOMYAKOV, K.P.

A STUDY OF THE RADIOPROTECTIVE ACTION OF A POLYMER SALT OF CYSTAMINE AND SULPHOPROPYL ESTER OF DEXTRAN

G-51766

M.N. Trushina, K.P. Khomyakov et al

Voprosy Meditsinskoi Khimii, 15, 5 (1969) 195-198

(from Russian)

DRIC Transl. No. 2963 November 1972

Translated by Dr. B.F. Toms

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

A STUDY OF THE RADIOPROTECTIVE ACTION OF A POLYMER SALT OF CYSTAMINE AND SULPHOPROPYL ESTER OF DEXTRAN

M.N. Trushina, K.P. Khomyakov et al

Voprosy Meditsinskoi Khimii 5, 9 (1969) 193-198 (from Russian)

DRIC Transl. No. 2963 November 1972

Translated by Dr. B.F. Toms

SR 30227

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR UDC 615.384.015.2:615.362.018:547.756

CHERNOV, G. A., SHEVCHENKO, A. N., KHOMYAKOV, K. P., and VIRNIK, A. D.

"Toxicity and Radioprotective Properties of Serotonin-Containing Polyglucin Derivatives"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 3, May-Jun 71, pp 328-330

Abstract: Compounds containing serotonin bound to the polyglucin derivatives through azomethide and amide bonds had lower toxicity than those with ion-bonded serotonin. These derivatives produced a pronounced radioprotective effect in mice comparable to serotonin-creatinine sulfate. A conclusion is reached that addition of low-molecular weight medicinal compounds to water soluble polyglucin derivatives may be one of the choice methods for improving their properties.

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Equipment

USSR

UDC: None

[redacted], Engineer, Director of the Mosenergo Central High-Voltage Laboratory

"Work of the Central High-Voltage Laboratory to Improve the Reliability of High-Voltage Equipment"

Moscow, Energetik, No. 3, March 1971, pp 12-13

Abstract: This article is devoted to a description of the Central High-Voltage Laboratory (TsVL) in the Moscow power plant Mosenergo, its organization, personnel, and responsibilities. A forty-year old organization, the TsVL works on problems of the operation and improvement of high-voltage equipment in the power system, personnel safety, and accident-proof working habits. It comprises six laboratories; high-voltage switching equipment, preventive maintenance, power transmission lines, chemistry of electrical industry materials, high-voltage measurements, and safety techniques.

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USSR

KHOMYAKOV, M. V., Energetik, No 3, March 1971, pp 12-13

The budget of the plant runs to about 400,000 rubles, of which 50% is devoted to work on fulfillment of the scientific research production plan, 30% to parts and components made in the laboratory, 15% to standard tests of parts and materials, and 5% to capital repairs. Two organizational diagrams are given, one for the high-voltage switching equipment laboratory, the other for the preventive maintenance laboratory.

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1/2 - 028 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE STUDIES OF RADIOPROTECTIVE ACTION OF POLYMER SALT OF CYSTAMINE AND SULPHOPROPYL ESTER OF DEXTRANE -U-

AUTHOR--TRUSHINA, M.N., KHOMYAKOV, K.P., VIRNIK, A.O., ROGOVIN, Z.A., ROGOZKIN, V.D.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 195-198

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOPROTECTIVE AGENT, CYSTAMINE, POLYMER, DEXTRAN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0642 STEP NO--UR/0301/70/016/002/0195/0198

CIRC ACCESSION NO--AP0102628

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADIOPROTECTIVE ACTION OF SALT LIKE ADDUCT OF CYSTAMINE TO SULPHOPROPYL ESTER OF DEXTRANE HAS BEEN STUDIED. ADDITION OF CYSTAMINE TO POLYMER LEADS TO INCREASE IN RADIO PROTECTIVE EFFECT OF CYSTAMINE AT A SMALL DOSES INJECTED 10-15 MIN BEFORE IRRADIATION. CYSTAMINE AND DEXTRANE COMPLEX IS CHARACTERIZED BY THE PROLONGED PERIOD OF ACTION AS COMPARED TO CYSTAMINE DIHYDROCHLORIDE. THIS ENABLES THE AUTHORS TO ADMINISTRATE THE POLYMER 1 H BEFORE IRRADIATION INSTEAD OF 15 MIN AS IT TAKES PLACE FOR CYSTAMINE DIHYDROCHLORIDE.

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AA0036344

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

237353 CHILLING AND TEMPERING SHEET GLASS, which first of all passes through an electrically (resistance) heated furnace 1 by means of the chain conveyor 2 and under which are a series of nozzles through which an air/gas mixture is injected, so as to form a cool cushion of gas on the underside of the sheet. The sheet then passes into a separate treatment chamber where a mixture of air and liquid from different sets of nozzles, above and below the moving glass sheet, is sprayed on to the glass. Air/gas circulating pipes, and liquid supply pipes connected to a reservoir, are incorporated in the assembly. In this way, the glass is cooled sufficiently for handling, and tempered at the same time. 29.4.67. as 1155710/29-33. M.D GRIGOR'EV and R.D KHOMYAKOV. Technological Plant for Glass Prod. Special Design Office. (2.7.69.) Bul.8/12.2.69. Class 32a. Int.Cl. C03b.

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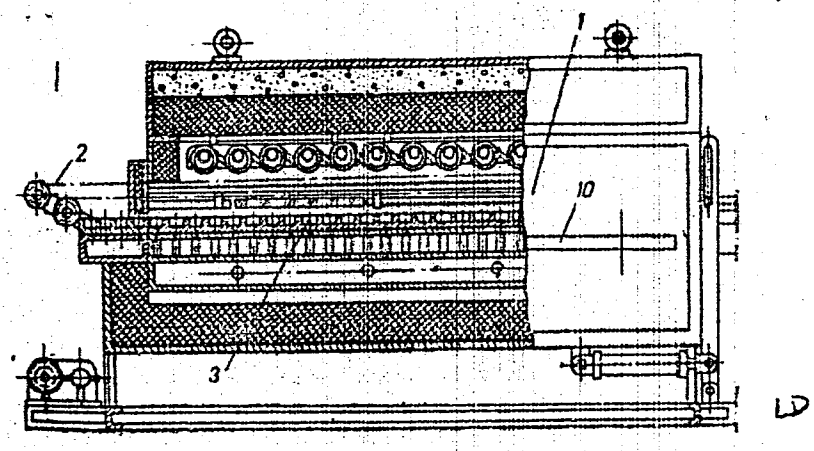

AUTHORS: Grigor'yev, M. D. and Khomyakov, R. D.

Gosudarstvennoye Spetsial'noye Proyektno- Konstruktorskoye Byuro po Proyektirovaniyu Tekhnologicheskogo Oborudovaniya dlya Stekol'nogo Proizvodstva

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USSR

KHOMYAKOV, V. A.

"Study of Approximation Error in an Individual Step of the Process of Iterative Aggregation in a Product Balance Model"

Modelir. Ekon. Protsessov [Modeling of Economic Processes -- Collection of Works], Moscow, Moscow University Press, 1972, pp 319-342 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V560, from the introduction).

Translation: In producing the fixed requirements for end product output $y_1, \ldots, y_n$ for each type of product, the required overall volume of output $x_1, \ldots, x_n$ can be determined from a product balance model:

$$x_i = \sum_{j=1}^{n} a_{ij} x_j + y_i, \quad i = 1, \ldots, n. \tag{1}$$

Since equation system (1) has high dimensionality and its precise solution is difficult, iterative methods are frequently used. This brings up

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USSR

Khomyakov, V. A., Modelir. Ekon. Protsessov, Moscow, Moscow University Press, 1972, pp 319-342.

the problem of estimating the closeness to the solution of the initial model in each step. This work studies the approximation error for each step of the process of iterative aggregation.

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USSR

UDC 669.71.472(088.8)

KHOMYAKOV, V. S., and ZAYTSEV, V. N.

"Anode Rod for Aluminum Electrolyzers With Top Application of Current to Anode"

USSR Author's Certificate No 258610, Filed 12/08/68, Published 20/04/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G149 P)

Translation: In order to simplify the design of the anode rod, improve contact, and assure even distribution of loads, a nonmagnetic rod is made as a hollow cylinder and rigidly connected to the rod head. The rod head is made as a cavity with protuberances along the longitudinal axis of the rod.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--POROSITY OF COATINGS -U-

AUTHOR-(02)-BUSHINSKIY, I.M., KHOMYAKOVA, F.T.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,970
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POROSITY, SILVER, HYDROGEN SULFIDE, SPECIALIZED COATING, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1083 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116549

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COATING POROSITY IS STUDIED BY SUCCESSIVELY APPLYING AN AG LAYER AND LAYER OF THE COATING BEING STUDIED ON A TRANSPARENT BASE. THE BASE IS THEN MOVED INTO A MEDIUM THAT REACTS WITH AG, E.G. H SUB2 S, AND THE COATING POROSITY IS EVALUATED VISUALLY.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC: 669.018

KHON, Yu. A., FADIN, V. P., and KUZNETSOV, V. N.

"Some Characteristics of Atom Segregation in Antiphase Boundaries of Triple Alloys With a Face-Centered Cubic Lattice"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy--Fizika, No 5, 1973, pp 18-25

Abstract: This paper examines the theory of the formation of atom segregation at antiphase boundaries of the {111} type in ternary alloys with face-centered cubic lattices. The interaction of the atoms in the first two coordination spheres is taken into account in this investigation into the effect of the size of the domains and the relationships between the atomic interaction energies on the extent of the segregations. It is assumed that the effect of antiphase boundary erosion can be neglected. The authors begin their analysis with the equation for the energy configuration per unit volume of the triple alloy and the expression for the configuration part of the entropy. Analysis of the equations of the solution derived in the article showed that the density of the antiphase boundary has little effect on the amount of segregation. It was

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC: 669.018

KHON, Yu. A., et al, Izvestiya vysshikh uchebnykh zavedeniy--fizika, No 5, 1973, pp 18-25

also found that with relatively strong interaction of the A and D atoms of the A-B-D components of the triple-alloyed material, substantial segregation of the B element occurs, with consequent delay in the ordering processes at the stage of domain growth. This conclusion agrees qualitatively with the known experimental results.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR

UDC: 539.21:536.72

KHON, Yu. A., FADIN, V. P., and NAZHALOV, A. I.

"Theory of the Ordering Phenomenon in Triple Alloys, Part I"

Tomsk, Izvestiya VUZ--Fizika, No 1, 1972, pp 17-22

Abstract: As indicated by the title, the present article is the first part of a two-part article dealing with the phenomenon of atomic ordering in triple alloys with center-faced crystal lattices from a theoretical point of view. In this first part, an investigation is made of possible types of superstructures in such triple alloys, with computations made on an alloy model, taking into account the interaction of atoms in the first two coordination spheres. The conditions of existence of the various types of superstructure are also investigated. The second part of this paper will theoretically investigate the effect of the interatomic action on the nature of the atomic distribution in such triple alloys, using the same sort of model as that mentioned above. The authors are associated with the V. D. Kuznetsov Siberian Physico-Technical Institute at the Tomsk State University.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/3 017 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EPIDEMIOLOGY OF LATERAL AMYOTROPHIC SCLEROSIS -U-

AUTHOR-(02)-KHCNDKARIAN, O.A., MAKSUDOV, G.A.

CCUNTRY OF INFO--USSR

SCURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 1, 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NERVOUS SYSTEM DISEASE, VIRUS DISEASE, LESION, EPIDEMIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1417 STEP NO--UR/0248/70/025/001/0083/0086

CIRC ACCESSION NO--AP0130164

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/3 017 UNCLASSIFIED PROCESSING DATE--20NOV7C

CIRC ACCESSION NO--AP0133364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF LATERAL AMYOTROPHIC SCLEROSIS (LAS) DATES BACK TO OVER 100 YEARS. CHARCOT AND A. YA. KOZHEVNIKOV FURNISHED A CLEAR CLINICAL AND PATHOMORPHOLOGICAL DESCRIPTION OF THE DISEASE, HAVING ASSERTED THE POSITION OF LESION TO THE ENTIRE CEREBROSPINAL AXIS. BUT TO THIS TIME, THE BASIC ISSUES PERTAINING TO ETIOLOGY AND PATHOGENESIS OF LAS REMAIN UNSETTLED. AS YET THERE ARE NO WORKS ON THE EPIDEMIOLOGY OF LAS IN THE SOVIET UNION. YET THIS IS A PROBLEM THAT MERITS ATTENTION. AT PRESENT, MUCH ATTENTION IS BEING GIVEN TO LATENT VIRAL INFECTIONS WITH A LONG INCUBATION PERIOD. THIS INCLUDES HUMAN KURU DISEASE ENCOUNTERED IN NEW GUINEA IN THE FORE TRIBE. KURU WAS FIRST DESCRIBED BY FAJDUSEK IN 1953. THEREAFTER, GAJUSEK ET AL. PUBLISHED THE RESULTS OF INFECTING CHIMPANZEES, IN WHOM THE CLINICAL AND PATHOMORPHOLOGICAL FINDINGS CORRESPONDED TO THOSE IN MAN. FOR A NUMBER OF YEARS, THE INSTITUTE OF NEUROLOGY, USSR. ACADEMY OF MEDICAL SCIENCES, HAS BEEN CONDUCTING EXPERIMENTAL STUDIES ON MONKEYS TO INVESTIGATE LAS. THE PRELIMINARY RESULTS GIVEN REASON TO BELIEVE THAT THERE IS A POSSIBILITY OF LATENT INFECTION FOR THIS DISEASE. THEREFORE, INVESTIGATION OF THE EPIDEMIOLOGY OF LAS IS IMPORTANT, NOT ONLY FROM THE STANDPOINT OF DISTRIBUTION OF THE MORBIDITY, BUT ALSO IT CAN INDIRECTLY HELP SETTLE THE MOST DEBATABLE ISSUES DEALING WITH THE ETIOLOGY AND PATHOGENESIS OF THIS COMPLEX CONDITION IN THE LIGHT OF LATENT NEUROINFECTIONS. WE HAVE MADE THE FIRST ATTEMPT AT INVESTIGATION OF THE EPIDEMIOLOGY OF LAS.

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3/3 017 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130364

ABSTRACT/EXTRACT--FOR THIS, ON BEHALF OF THE PROBLEM COMMISSION FOR THE MAIN DISEASES OF THE NERVOUS SYSTEM, WE ASKED THE HEADS OF THE CHAIRS OF NERVOUS DISEASES AT MEDICAL INSTITUTES, TO THE MANAGEMENT OF THE SCIENTIFIC RESEARCH INSTITUTES OF OUR COUNTRY TO SEND US BRIEF DATA ON LAS AND ITS SYNDROMES AS OBSERVED IN THE CLINICS OF THESE INSTITUTIONS WITHIN THE LAST 5-7 YEARS. WE RECEIVED INFORMATION FROM 60 INSTITUTIONS (52 CITIES) OF THE SOVIET UNION REFERABLE TO 1,834 PATIENTS (TABLE 1). THERE WERE 1,456 PATIENTS WITH LAS (918 MEN AND 538 WOMEN) AND 378 WITH THE LAS SYNDROME (260 MEN AND 118 WOMEN). FACILITY: INSTITUTE OF NEUROLOGY, USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--SOME ACTUAL QUESTIONS OF LATERAL AMYOTROPHICAL SCLEROSIS -U-

AUTHOR--KHONDKARIAN, O.A.

K

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 4, PP 527-531
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--METABOLISM, NERVOUS SYSTEM DISEASE, PROTEIN, ALPHA GLOBULIN, GAMMA GLOBULIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1664 STEP NO--UR/0246/70/070/004/0527/0531

CIRC ACCESSION NO--AP0106410
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2/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106410

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR ON THE BASIS OF 400 OBSERVATIONS DISCUSSES SOME MAIN QUESTIONS OF LATERAL AMYOTROPHICAL SCLEROSIS. EXCEPT THE 3 FORMS (BULBAR, CERVICOTHORACIC AND SACROLUMBAR) HE BELIEVES IT RIGHTFUL TO ELIMINATE A "HIGH" (CEREBRAL) FORM OF THIS DISEASE. IN THE CLINICAL PICTURE AND THE COURSE OF THE DISEASE SUCH CORRELATIONS AS THE ANTERIOR HORN AND PYRAMIDAL DISTURBANCES SHOULD BE TAKEN INTO CONSIDERATION. THE AUTHOR ATTRACTS ATTENTION TO THE NECESSITY OF STUDYING METABOLIC DISTURBANCES, AS DISTINCT CHANGES IN THE CONTENT OF PROTEIN FRACTIONS AND AN INCREASE IN THE LEVEL OF ALPHA SUB1 AND GAMMA GLOBULINS HAVE BEEN FOUND. OF GREAT IMPORTANCE IS THE STUDY OF THE EPIDEMIOLOGY OF LATERAL AMYOTROPHICAL SCLEROSIS. IN THE LIGHT OF NEW DATA, CONCERNING "DECELERATED" INFECTIONS OF THE NERVOUS SYSTEM, THE AUTHOR FINDS IT POSSIBLE TO ALLOCATE LATERAL AMYOTROPHICAL SCLEROSIS TO THE GROUP OF DISEASES WITH A DECELERATED INFECTION OF THE NERVOUS SYSTEM WITH AN EXTENSIVE INCUBATION PERIOD. HE STRESSES AS WELL THE NECESSITY TO TAKE INTO ACCOUNT THE CONSTITUTIONAL FACTORS IN EACH SEPARATE CASE.

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KHOJIKEVICH, A.A.

JPRS 58764

17 April 1973

DISPOSAL OF RADIOACTIVE WASTES

Collection of papers sponsored by the State Committee for the Use of Atomic Energy of the USSR, 1972, Moscow

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

TECHNICAL AND ECONOMIC ASPECTS OF HANDLING LIQUID WASTE WITH INTERMEDIATE AND HIGH LEVELS OF RADIOACTIVITY

(Paper by V. I. Spitsyn, A. A. Khomikovich, V. D. Baikova, L. M. Nosova and N. A. Kokov, State Committee for the Use of Atomic Energy of the USSR.
IAEA publication SM-163/10, Vienna, Russian, pp 1--20)

In this paper problems of handling wastes of high and intermediate levels of radioactivity, obtained in the regeneration of TVEL (fuel elements) of the YVER (water-cooled water-moderated power reactor) type are considered. Some data are given with respect to the chemical and radiochemical compositions of the wastes. For highly active wastes it is advisable to extract the strontium, cesium, and possibly also other isotopes. For the remaining part of the waste, the following ways of rendering them harmless are considered:

1) holding them in special depositories for a prolonged period of time, necessary for reduction of the general activity of the fission products contained in the waste;

2) solidification of highly active wastes by one of the well-known methods tested in experimental plants;

3) burial of highly active wastes in geological water-bearing strata similar to underground burial of wastes of intermediate activity as developed in the Soviet Union.

Since in this case the concentration of fission products in the soils and the gas and heat liberation associated with this as a result of the radiation processes presents the greatest hazard, the basic attention in underground burial of highly active wastes is devoted to the preparation of the wastes for burial. The preparation lies either in separatinN

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the precipitating substances from the waste, or by converting them into complex compounds which are stable in the conditions of the geological bed.

In the paper certain calculated technical and economic data on the storage of liquid highly active wastes are given, also concerning underground burial of wastes of high and intermediate levels of activity, and also a comparison of these methods with other methods of the storage and processing of radioactive wastes is made.

In the processing of used nuclear fuel, more than ninety-nine percent of the radioactive isotopes arriving at a radiochemical plant are concentrated in liquid wastes.

In the USSR liquid wastes with a specific activity of more than 1 curie per liter are called highly active wastes, those with from 1 to 1×10^{-5} curies per liter are wastes of intermediate activity, those with 1×10^{-5} and below are wastes with a low level of activity. The greatest potential hazard is presented by wastes with a high level of activity. At the present time in the entire world, with the exception of China, more than 300 thousand cubic meters of concentrated highly active wastes have been accumulated [1]. Naturally, normal operation of a plant for regeneration of nuclear fuel depends upon the successful solution of the problem of handling highly active wastes.

The use of water-cooled water-moderated reactors is provided in a considerable part of the program for the development of atomic power engineering in the USSR. In this paper certain basic principles with respect to rendering wastes from the regeneration of VVER TVEL harmless are considered, and the basic attention is devoted to wastes with a high level of activity. Out of methods of processing and burial of wastes of an intermediate level of activity, only those which may partially be used also for highly active wastes are given.

Nuclear fuel of reactors of the VVER type is sintered uranium dioxide, enriched with uranium-235 up to 3.3%. The average life of the fuel is about three calendar years, and the depth of burn-up reaches 30,000 megawatt - dyns per ton [2]. The holding of used VVER TVEL before regeneration at a radiochemical plant may vary--from half a year to three years depending upon the necessity of the fastest return of uranium to the fuel cycle. However, we should consider that a longer holding will lead to a decrease in the general activity of the TVEL and, consequently, the technological scheme of the regeneration plant may be simplified.

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KHONIKEVICH, A.A.

JPRS 58764

17 April 1973

DISPOSAL OF RADIOACTIVE WASTES

Collection of papers sponsored by the State Committee for the Use of Atomic Energy of the USSR, 1972, Moscow

CONTENTS

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

TECHNICAL-ECONOMIC COMPARISON OF THE METHODS OF SOLIDIFICATION AND LONG STORAGE FOR HIGHLY ACTIVE LIQUID WASTES FROM THE PROCESSING OF SPENT FUEL ELEMENTS OF WATER-COOLED WATER-MODERATED POWER REACTORS

(Paper by L. G. Aramavova, Z. G. Ilina, A. N. Kolosov, A. N. Kondratyev, M. A. Khodos, and A. A. Khonikevich, State Committee for the Use of Atomic Energy of the USSR, Vanadium Institute, V. G. Khlopin), Russian, IAEA publication SM-136/31, Moscow, 1972)

The development of atomic power engineering imposes on the specialists of all countries engaged in this problem a great responsibility to future generations with respect to reliability of rendering radioactive wastes from a complex of enterprises serving this branch of industry harmless.

Naturally, the greatest difficulties arise in handling wastes of a high level of activity, the quantity of which is continuously increasing [1].

For each million kilowatts of installed electric power of atomic reactors, in the processing of TVEL (fuel elements) of the VVER (water-cooled water-moderated power reactor) type approximately 40 cubic meters per year of such wastes are formed.

For rendering wastes of a high level of activity harmless by radioactive decay, storage for several hundred years is required. Aside from this it is known that the storage of wastes of a high level of activity in the form of solutions is costly, complicated, and unreliable, since it is necessary to cool them for a long time to remove the heat liberated in the decay of the radioactive elements, and also to ventilate the tanks with air for dilution of the hydrogen formed due to radiolysis of the solution. In connection with the fact that the service life of the storage spaces amounts to 20--25 years, the construction of additional tanks is required, to replace those which have broken down. Concern about the construction and operation of storage spaces

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In this case are transferred to following generations. It is natural that the idea of enclosing radioactive wastes in glasses and bitumens that are only slightly soluble in water is entirely logical, as these substances may be reliably buried for a prolonged period without great expenditures on the operation of storage spaces. However, the impurity of scientific consideration that enclosure in bitumen is permissible only for wastes with a specific activity of less than 10 curies per liter. At a greater specific activity swelling and failure of the bitumen is observed, because of the liberation of gasses formed as a result of radiolysis. The storage spaces for bitumen must be made with an explosive-proof design, since one of the basic gasses liberated is hydrogen [2, 37]. For more active solutions (> 10 curies per liter) obtained in the processing of TVEL from atomic reactors with a high burnup of fuel, vitrification is a more reliable method.

In this work a technical and economic comparison of two methods of handling highly active wastes is performed: storage in tanks and vitrification with subsequent storage of the glass blocks. [A comparison with the method of pumping wastes into deep formations of the earth's crust is performed in a work by V. I Spitsin and others.]

In the Soviet Union and in other countries several methods of vitrification of liquid wastes with a high level of activity are being developed, which differ in technology and design of the apparatuses, but all of them may be conditionally divided into two groups: single-stage and two-stage processes.

Single-stage processes are simpler with respect to formulation of the apparatus, but, however, their operation is very complicated, the service life of the apparatuses is insignificant, in connection with the fact that in the process of digesting glass at a temperature of 920--1000 degrees C a contact of the nitric-acid solutions and the nitrogen oxides on the water vapors with the walls of the apparatuses occurs.

It appears more feasible to conduct the process of vitrification in two stages: to perform dehydration and calcination at comparatively low temperatures (300--400° C), and to form the glass at high temperatures (900--1000° C). One of such methods is the method being developed in the Soviet Union [6], with respect to which the process of drying and calcination is performed in an apparatus with a boiling layer, and the process of vitrification in a ceramic (concrete) crucible by means of an induction current.

A technical-economic analysis of the method of storing solutions is considered in detail in a paper by V. I. Spitsin and others. In this paper, an analysis is made of only the method of vitrification and a comparison of it with the storage of solutions.

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USSR UDC: None

ZUBAREV, D. N. and KHON'KIN, A. D.

"Method of Obtaining Normal Solutions to Kinetic Equations Using the Boundary Conditions"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, vol. 11, No 3, 1972, pp 403-412

Abstract: The authors define normal solutions as distribution functions which are sought as functionals of such hydrodynamic parameters as density, average-mass velocity, and temperature. In this paper, they propose a method for finding such solutions with an approach similar to that of earlier methods but with certain advantages over them. The equation for which the solutions are obtained is the Boltzmann kinetic equation. The equation is put in the integral form, in which the boundary conditions are taken into account, to provide a selection of normal solutions only. This form of the equation is used to determine various approximations in constructing the normal solutions as well as to solve other problems in the kinetic theory of gases. As an example of how this method is applied, the transfer laws in a single-component gas and the distribution functions in the first approximation for low gradients are considered.

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KHONONZON G. A.

AA0044261 UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

243864 CALORIMETRIC CONSUMPTION METER FOR LIQUID AND GASES consisting of a connecting pipe (1) of a nonconducting material (e.g. glass, bakelite etc.): identical temperature sensitive elements (2,3) with insertable sleeves (4,5): h.f. coils (6,7) and measurement generators (8,9): switches (10,11); comparator (12); time delay device (13); h.f. generator (14); h.f. heating winding (15) and meter (16).

The instrument operation is based on heat takeoff intensity from a heated object by the flowing substance. The sleeve temperature change changes the circuits impedance, which in turn changes the generators (8,9) oscillation amplitude.

21.3.67 as 1153626/18-10.KHONONZON.G.A.et alia. (30.9.69) Bul 17/14.5.69. Class 42e. Int.Cl.G01f.

AUTHORS: Khononzon, G. A., Shakhmatov, Ye. P., Yusubov, E.

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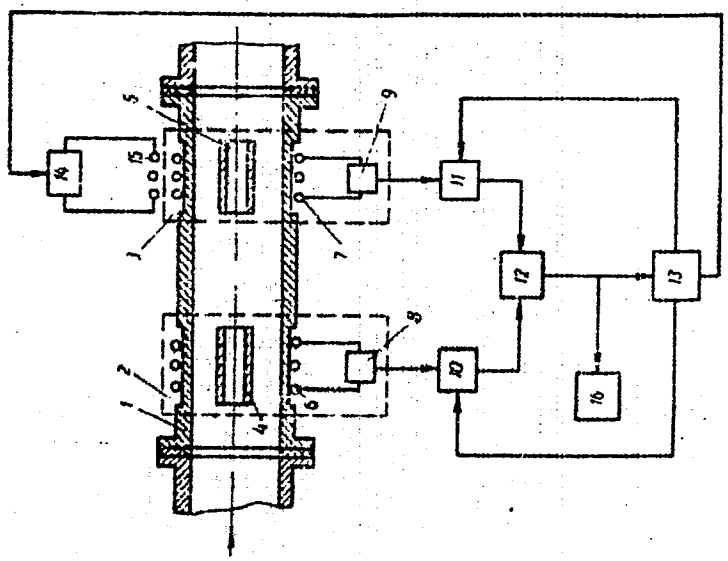

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ИТ

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USSR

UDC 621.396.666

KHONYAK, Ye. T.

"A Device for Automatically Controlling Signal Level"

USSR Author's Certificate No 254560, Filed 10 Jun 68, Published 9 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D65 P)

Translation: This Author's Certificate introduces a device for signal AGC. As the control element, the device utilizes two nonlinear resistors such as semiconductor diodes connected in series with an AC amplifier. The bias voltage and the control voltage which depends on signal level are applied to these nonlinear resistors. To reduce nonlinear distortions and losses in signal level under maximum amplification conditions, the signal is fed to the amplifier input through a series tank circuit tuned to its frequency. The capacitor in this tank circuit is connected in parallel with the above-mentioned nonlinear resistors. An additional capacitor is connected between the input terminal of the inductance coil in the tank circuit and the point where the nonlinear resistors are interconnected. As the signal level increases, this additional capacitor forms a parallel tank circuit tuned to the signal frequency together with the above-mentioned inductance coil.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

USSR UDC: 621.396.666(088.8)

KHONYAK, Ye. I.

"A Device for Automatic Signal Level Control"

USSR Author's Certificate No 278780, filed 16 May 69, published 16 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D77 P)

Translation: A device utilizing nonlinear elements such as semiconductor diodes whose impedance depends on the input signal level is proposed for automatic signal level control by using a series tank circuit tuned to the middle frequency of the signal and connected in series with the amplifier input. To reduce frequency distortions with an increase in the level of a wide-band input signal, the common point between the capacitor and inductance coil of the tank circuit is connected together with the amplifier input to the common line of the amplifier through nonlinear elements which combine with the tank inductance coil and capacitor to form nonlinear voltage dividers for the input signal.

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USSR

UDC 621.396.666(088.8)

KHONYAK, YE. I.

"Device for Automatic Regulation of the Amplification of a Superheterodyne Receiver"

USSR Author's Certificate No 252407, Filed 10 Jun 68, Published 12 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D61P)

Translation: This author's certificate introduces an automatic gain control with utilization of two series connected nonlinear resistances included in the signal circuit as the regulating element. These resistances are, for example, semiconductor diodes to which a bias is fed from the source of the semiconductor triode collector voltage of the receiver. In order to increase the depth of regulation and decoupling of the signal and heterodyne circuits for high levels of received radio signals, the regulating element is included in series with the input of the frequency converter, and the heterodyne voltage is fed to the point at which the nonlinear resistances are connected to each other.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--APPARATUS FOR SUPERIMPOSING TRIANGULAR VOLTAGE PULSES ON A DROPPING MERCURY ELECTRODE AT A GIVEN MOMENT OF DROP LIFE -U-

AUTHOR-(05)-LENTSNER, B.I., KHOPIN, A.M., KNOTS, L.L., TSVENTSASHVILI, V.SH., ZHDANOV, S.I.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 29-34

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DROPPING MERCURY, THALLIUM, CADMIUM, ION, ELECTROLYTIC REDUCTION, BENZALDEHYDE, POLAROGRAPHIC ANALYZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1815 STEP NO--UR/0364/70/006/001/0029/0034

CIRC ACCESSION NO--AP0100389

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201320004-7

2/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100389

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APP., BASED ON THE POTENTIOSTAT, WAS TESTED BY USING A STD. SOLN. CONTG. TL PRIME POSITIVE AND CD PRIME2 POSITIVE AND FOR THE STUDY OF A NO. OF COMPOS. THE REDN. OF BENZALDEHYDE ON THE DROPPING MERCURY ELECTRODES WAS STUDIED IN A N HCLO SUB4 ALC. SOLN. THE ABSENCE OF ANODE PEAKS CORRESPONDING TO OXION. OF THE RADICALS TO THE INITIAL SUBSTANCE ON THE CYCLIC POLAROGRAMS IS ATTRIBUTED TO THE STAGE SUBSEQUENT TO THE ELECTRODE PROCESS PROCEEDING VERY RAPIDLY AND THE OXION. CURRENT OF THE INTERMEDIATE PRODUCT NOT REGISTERING PRIOR TO RATES OF APPLICATION OF THE POTENTIAL IN THE ORDER OF 100 V-SEC.

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USSR

UDC 621.787.621.9048.6:669.2/.8

KARTYSHEV, B. N., Candidate of Technical Sciences, and PIROGOV, YE. V. and KHOPOSHEV, I. A., Engineers

"Effectiveness of the Hardening of Alloys AK-6 and V-93 by Vibration Treatment in an Abrasive Medium"

Moscow, Vestnik Mashinostroyeniya, No 11, Dec 73, pp 71-72

Abstract: Results are presented of an investigation of the hardening of alloys AK-6 and V-93 by vibration treatment in a medium of abrasive granules. The experimental procedure is described. The conclusion is drawn that such hardening is entirely feasible and highly beneficial. On the basis of the conducted research, technological processes have been worked out for hardening these alloys in this manner. 1 figure. 2 references.

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USSR

UDC 620.179.16

BABIN, L. V., BELOGORODSKIY, B. A., ZHELEZNOV, I. M., and KHOPOV, V. V.
Physicotechnical Institute imeni A. F. Yoffe, Academy of Sciences, USSR

"A Multi-element Scanning Device for Acoustic Holography"

Sverdlovsk, Defektoskopiya, No 2, 1972, pp 100-104

Abstract: The multi-element scanning device described here is intended for nondestructive inspection and flaw detection by methods of acoustic holography. A simple electronic device was developed for discrete interference processing of the obtained signals. This is a device of a mixed type, which to a certain degree combines the simplicity and reliability of a mechanical scanning system with the rapid selection of an acoustic field that is inherent in electronic scanning systems. This effect is obtained by means of mechanical scanning by a large number of pickups situated in a line, with simultaneous electronic commutation of the pickups along the line. The described device was tested during operation with commutatingpulses 30-50 microseconds in duration; the duty cycle was varied within the limits of 1-5 megahertz; the number of circulation cycles was on the order of 80-100. 3 figures. 1 reference.

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USSR UDC 616.981.336

KHORAVA, G. V., DARTSMELIYA, N. V., and DZHANDZHGAVA, M. V., Sukhumi Hospital for Infectious Diseases

"Several Cases of Sodoku"

Moscow, Sovetskaya Meditsina, No 2, 1973, p 146

Abstract: Excerpts are presented from the case histories of 3 persons (29, 75, and 8 years old) who were bitten by rats and developed sodoku with the typical symptoms of the disease - fever, local inflammatory reaction at the site of the bite, headache, and enlargement of the regional lymph nodes. Penicillin proved to be efficacious in all 3 cases (200,000 every 4 hours for 4 to 7 days), and there were no relapses.

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USSR UDC 541.69+547.554

MNDZHOYAN, A. L., (DECEASED), MARKARYAN, E. A., ALEKSANYAN, R. A., KHORENYAN, G. A., MALAYAN, R. S., and ARUSTAMYAN, ZH. S., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"Derivatives of Arylalkylamines. II. Constitution and Physiological Activity of Some Substituted Arylalkylamines and Their Derivatives"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 8, 1971, pp 703-713

Abstract: Bu condensing the chlorides of substituted phenylacetic, diphenylpropionic, and diphenylacetic acids with phenyl- and phenoxyisopropylamine, amides I were prepared. Reduction with $LiAlH_4$ converted compounds I into the substituted arylalkylamines II. By cyclizing the amides according to Bishler-Napieralski and then reducing, tetrahydroisoquinoline derivatives III were synthesized. By reacting phenylisopropylamine with indanones and reducing the ketimines that formed, aminoindans IV were obtained. Hydrochlorides of compounds II, III, and IV were effective as coronary dilatants (table). The formulas and properties of compound I and of the hydrochlorides of II and III are listed in tables.

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USSR

UDC 669.295.5:620.183

AGEYEV, N. V., BABAREKO, A. A., RUBINA, Ye. B., KHOREV, A. I., KRASNOZHON, A. I., and BETSOFEN, S. Ya., Moscow

"Effect of the Processing Technology on the Texture of Rolled Sheets of VT-5-1 and VT-14 Titanium Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, No 5, 1973, pp 150-159

Abstract: The development of the texture of α-phase in sheets, 2 mm thick, of VT-5-1 alloy and $\alpha+\beta$-alloy VT-14 on rolling, depending on the reduction degree, the deformation, temperature, and the divisibility of rolling, was studied by the method of polar figures. The results are discussed by reference to the correlation of principal texture components and direct and reverse polar figures. The intensity of the basal plane texture in the α-phase VT-5-1 alloy grows monotonously with increasing reduction degree. In the $\alpha+\beta$ alloy VT-14, the basal texture changes not monotonously by changing deformation conditions;

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AGEYEV, N. V., et al., Izvestiya Akademii Nauk SSSR, No 5, 1973, pp 150-159

this is due to the influence of developing phase transformations $\alpha \rightleftarrows \beta$ and the twinning in the alloy. Cross rolling of the not overheated ingot slab from 6 to 2 mm , in 11-22 passages, at 700°C, or at 800°C by non fractional rolling is considered the optimum rolling system. A perfect basal texture in annealed sheets of VT-5-1 alloy leads to a high hardening effect at two-axial loading. Recrystallization annealing is of little effect on the type of the texture. A deflected basal texture of the VT-14 alloy does not effect a texture hardening in annealed and in dispersion-hardened sheets. Four figures, one table, ten bibliographic references.

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USSR

UDC: 621.78:620.18:669.295

KHOREV, A. I., MUKHINA, L. G.

"Heat Treatment and Mechanical Properties of Alloys in the Systems Ti-Al-Fe and Ti-Al-Cr-Fe"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 9, 1973, pp 57-60.

Abstract: The influence of the eutectoid-forming beta-stabilizing elements iron and chromium plus iron (with 3% Al) on the mechanical properties of alloys was studied after various heat-treatment modes. The studies were performed on bars 12 mm in diameter. The alloys contains beta-stabilizing additives in quantities equivalent to a certain quantity of molybdenum: 1% Mo is equivalent to 0.4% Fe or 0.6% Cr. It is shown that satisfactory ductility of the base metal is retained in the annealed state with alloying by up to 8.0% Fe or up to 9% Cr + 6% Fe, in the thermally hardened state -- upon alloying by up to 3.2% Fe or 2.4% Cr + 1.6% Fe. Bars of the alloy with superheated structure retain satisfactory ductility in the annealed state following alloying by up to 4.8% Fe and 3.6% Cr + 2.4% Fe.

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USSR

UDC 669.295:620.172.2

PETRAKOV, A. F., KHOREV, A. I., PETROV, L. N., and RUBLEV, YA. A.

"Resistance of Titanium Alloys to Repeated Static Loads"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73, pp 46-50

Abstract: The effect of depth and hardness of the gas-saturated layer produced during heating for quenching and aging was studied with respect to the resistance of VT6S and VT14 titanium alloys to repeated static loads under uniaxial and biaxial tension. It was found that the gas-saturated layer (0.1 mm deep) on the surface of these alloys somewhat reduces alloy strength and sharply lowers ductility. Removal of the gas-saturated layer by etching to a depth of 0.1 mm for VT6S alloy and 0.5 mm for VT14 increased the service life of samples by 3-4 times under repeated static loads. A study of the rupture kinetics on samples of VT6S during repeated static loads showed that the gas-saturated layer mainly affects the number of cycles until the development of fatigue cracks, in that these cracks develop with the first load cycles. In short-time biaxial stress of VT14 the presence of the gas-saturated layer has little effect on the strength but severely worsens the nature of fracture. The service life of VT14 under biaxial stress with the gas-saturated layer is two orders less than without the layer. One table, four figures,
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USSR

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KHOREV, A. I., GLAZUNOV, S. G., and MUKHINA, L. G.

"Mechanical Properties of Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo System"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

Abstract: Alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo system with a constant amount of α-stabilizing element (3% Al) and a variable amount of β-stabilizers (chromium and molybdenum) were investigated. The experimental procedure and test results are discussed. The mechanical properties of the alloys in the annealed and quenched states were plotted for annealing at -50°C for 1 hour with cooling in air, annealing at -100°C and cooling in air, water quenching from -50°C, water quenching from -100°C, and water quenching from +50°C. The mechanical properties of the alloys in the thermally hardened state and their sensitivity to syperheating were also plotted. It was found that alloys of the Ti-Al-Cr and Ti-Al-Cr-Mo (close to critical concentration) system in the annealed state have high plasticity with strength reaching 120 kg/mm^2. Quenching with subsequent aging as a method

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KHOREV, A. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 28-34

of improving strength while retaining satisfactory plasticity can be applied for alloys of the Ti-Al-Cr system containing no more than 3.6% Cr and for all Ti-Al-Cr-Mo alloys containing up to 9% Cr + 15% Mo. The mechanical properties of alloys with superheated structure in the annealed and thermally hardened state were investigated. With equal strength obtained after hardening heat treatment of low-alloy alloys and annealing of high-alloy alloys, the latter retain higher plasticity.

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UDC: 620.17:669.295

KHOREV, A. I.

"Mechanical Properties of Titanium Alloys with Isomorphic Beta-Stabilizing Elements"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 5, 1972, pp 13-18.

Abstract: The author studied titanium alloys with constant content of α-stabilizing element and variable contents of isomorphic β-stabilizing elements. Alloys based on the α, α + β, and β phases, alloyed with Al, Mo and V were studied. The properties of the alloys are demonstrated following annealing, hardening, and hardening with subsequent aging. Alloys in the system Ti-Al-Mo have higher strength than alloys in the system Ti-Al-V. The sensitivity of the alloys to heating, represented by the reduction in mechanical properties following heating to temperatures in the beta area, increases with increasing alloying up to the critical concentrations. In order to decrease the quantity of difficultly soluble molybdenum, it is desirable to alloy the titanium with both β-stabilizing elements simultaneously.

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USSR

UDC 621.791.052:620.192.4

KHOREV, A. I., Candidate of Technical Sciences, and GRUZDEVA, L. A., Engineer

"Strength Properties of Welded Joints of Titanium Alloys Containing Isomorphous β-Stabilizing Elements"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 71, pp 37-40

Abstract: The article describes results of a study of the effect of isomorphous β-stabilizing elements -- molybdenum and vanadium, as well as molybdenum in conjunction with vanadium (given a constant α-stabilizing aluminum addition content of 3 percent) on the mechanical properties of the base metal and welded joints of titanium alloys. The vanadium was introduced in an amount conditionally equivalent to the effect of molybdenum (1 percent Mo equivalent to 1.5 percent V). For smelting of alloys use was made of TG 105 titanium sponge, A00 aluminum, aluminum-molybdenum master alloy, molybdenum powder, and high-purity vanadium. It was found that alloys containing vanadium of electrolytic purity have a lower strength than those alloyed with molybdenum, while those alloyed simultaneously with molybdenum and vanadium take an

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KHOREV, A. I., and GRUZDEVA, L. A., Svarochnoye Proizvodstvo, No 8, Aug 71, pp 37-40

intermediate position with respect to strength. An attempt is made to classify weldable titanium alloys according to mechanical properties and degrees of alloyage with β-stabilizing elements. There is a zero group containing α-alloys unalloyed with β-stabilizing elements (Ti-3Al alloy; commercial unalloyed VT1-00, VT1-0, VT1 titanium; alloys VT5 (Ti-5Al) and VT5-1 (Ti-5Al-2Sn). Group I consists of low alloys of the martensitic type (OT4-type sheet titanium alloys), group II medium martensitic-type alloys (alloys VT6S, VT6, VT14, VT23), group III high martensitic-type alloys (alloy VT16), group IV low β-alloys (alloys of the system Ti-12Mo-(4-6)Sn; Ti-12Mo-(4-6)Zr; Ti-11Mo-5Sn-5Zr), group V medium β-alloys (alloy VT15). Group VI consists of alloys containing 30 percent or more molybdenum.

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USSR

UDC: 669.295'71'28:621.789-974

KHOREV, A. I., CHINENOV, A. M. (Deceased), and MARTYNOVA, M. M.

"Thermomechanical Treatment of Alloys of the Titanium-Aluminum-Molybdenum System"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, Sept 71, no 9, pp 43-46

Abstract: This study concerns the effect of thermomechanical treatment (TMT) on the hardening of titanium alloys. TMT combines quenching, forming, and aging. The Ti-Al-Mo test alloys had a constant aluminum content (3%) with Mo content varying from 0.5 to 30%. Alloy strips were quenched from a temperature 50°C below that of $\alpha \rightleftarrows \beta$ transformation (holding time 15 mins) and cold rolled for 20 and 40% deformations. Aging was performed at 450 and 500°C for 5 and 25 hrs. It was found that hardening due to cold deformation is a function of phase composition; it is maximal in an alloy of Ti with 3% Al and 15% Mo possessing high forgeability at cold deformation. Cold deformation minimizes primarily uniform elongation while affecting to a lesser degree localized elongation. Compared to conventional strengthen-

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